

Preparation of biodegradable composites with peach palm biomass

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Resumo

*Peach palm (*Bactris gasipaes*) is a multi-purpose palm tree, mainly utilized for food industry (fruits and palm core), being important cash income for smallholders. Brazil is one of largest producers and consumers of heart-of-palm of the world. The peach palm is a perennial crop which has a great potential for replaces native palms of the genus *Euterpe* that is exploited in a predatory manner, to improve food security and achieve sustainable land use. During the production process the palm core, parts, such as of stipe, leaves, and, sheaths are discarded. Some of this material remains at the harvesting, but large amount become waste without suitable use. As a way to reuse the waste from peach palm agroindustry, the aim of this study was evaluating the effect with different proportions (10, 25 e 50%) of peach palm residues (basal part, internal, and, external sheaths) incorporated with PBAT (polybutylene adipate-co-terephthalate). Residues were collected from an agroindustry in Paranaense Coast to produce the composites, after that they were dried in an oven at 65-70°C for 72 h, cut into small lengths on a Wiley mill and sifted through a mesh 35(500 µm). Then, a total of 120 g (residue + polymer) was used to each sample, composites' homogenization were conducted by a thermo kinetic homogenizer MH-100 equipment and thermal molded in the dimensions 120 mm x 120 mm x 3 mm by flat-pressing at 45 MPa, 120° C for 5 min in a hydraulic press Marconi MA 098/A. Increasing the proportion of the residue also increases swelling content, water absorption and decreases thermal stability. Overall, the three parts of peach palm can be used to produce the composites, which the most indicated proportions found were 10% and 25% of residue and, 90% and 75% of PBAT, respectively.*

Key words. Polymer. *Bactris gasipaes*. waste management.